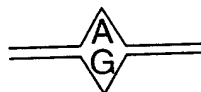


A.L.B.U.M.S.: ALDEHYDE - LINKER - BASED  
ULTRASENSITIVE MISMATCH SCANNING.

1. ISOLATE mRNA FROM CANCEROUS AND NORMAL TISSUE.  
GENERATE cDNA LIBRARY FOR GENES TO BE SCREENED.

2. A ) MIX, HYBRIDIZE C  
MUTATION WILD TYPE



A/G MISMATCH (25%)

3. TREAT w. MISMATCH REPAIR GLYCOSYLASES.  
LABEL RESULTING ALDEHYDES w. FARP.  
IMMOBILIZE FARP - LABELED DNA ON MICROPLATES.

4. DETECT TOTAL MUTATION VIA CHEMILUMINESCENCE.  
ISOLATE AND RECOVER MUTATED DNA, PCR.  
IDENTIFY MUTATION - CONTAINING GENES  
ON DNA ARRAYS FOR HUNDREDS/THOUSANDS OF GENES.

└─ VERIFY BY  
SEQUENCING

ESTABLISH SINGLE-STEP SCREENING OF HUNDREDS OR  
THOUSANDS OF GENES IN CANCER SAMPLES FOR MUTATIONS.  
STREAMLINE AND DISSEMINATE THE TECHNOLOGY.

FIG. 1

TECHNOLOGY FOR ISOLATING AND IDENTIFYING MUTATIONS  
OVER HUNDREDS OR THOUSANDS OF GENES SIMULTANEOUSLY:  
AN EXAMPLE OF SCREENING FOR A-TO-C TRANSVERSIONS.

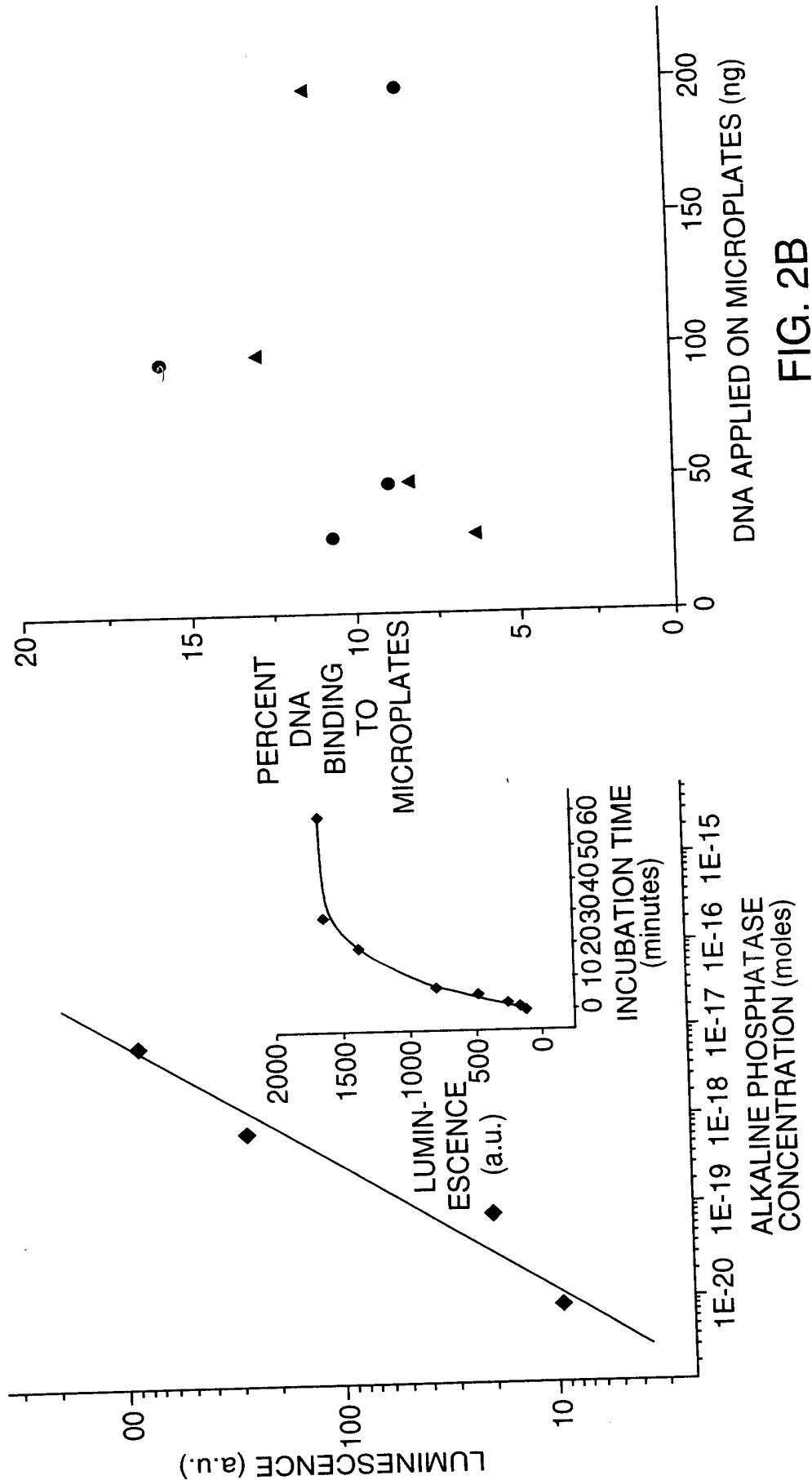


FIG. 2A

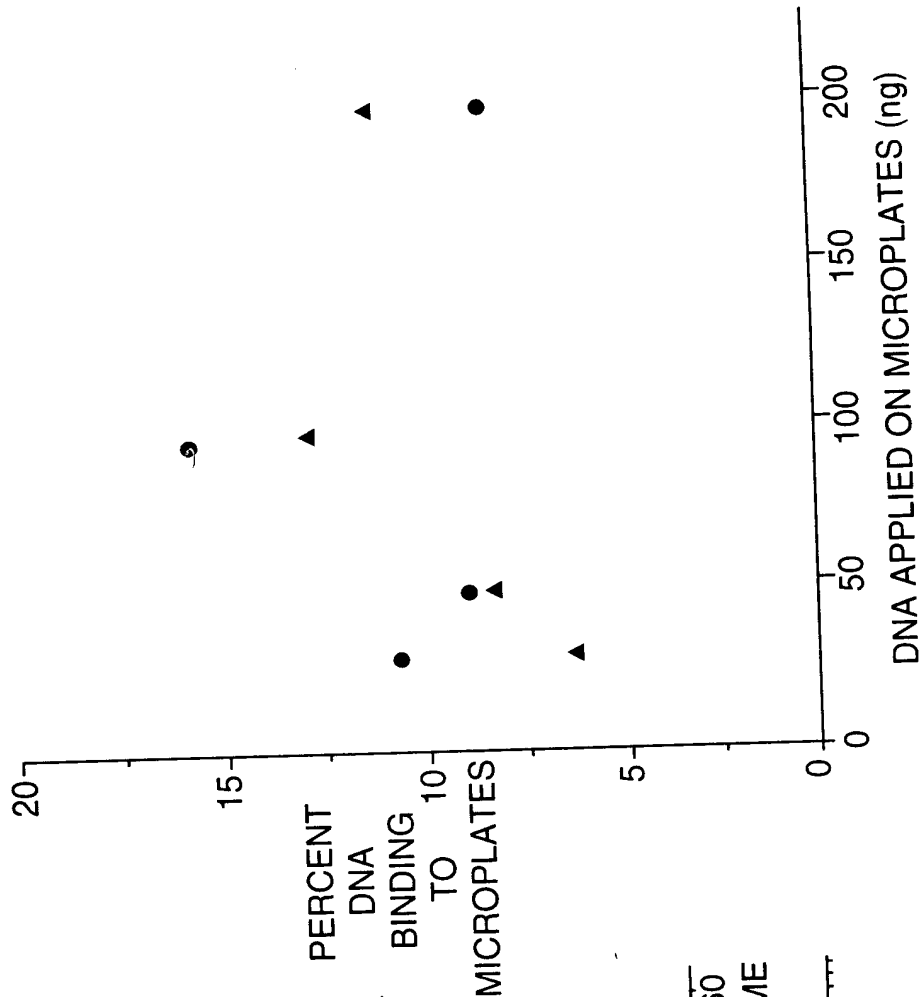


FIG. 2B

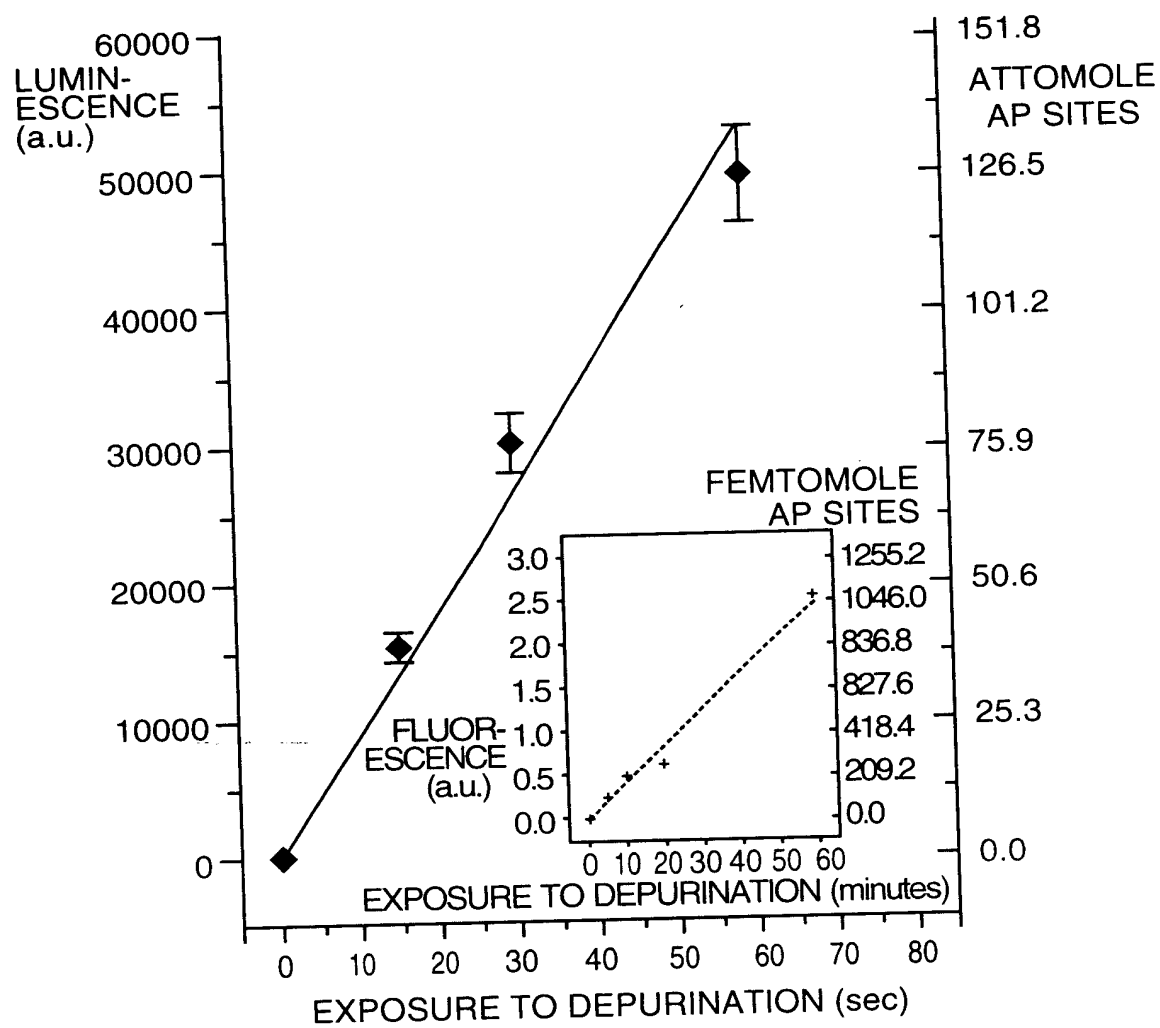


FIG. 3

000000-000000

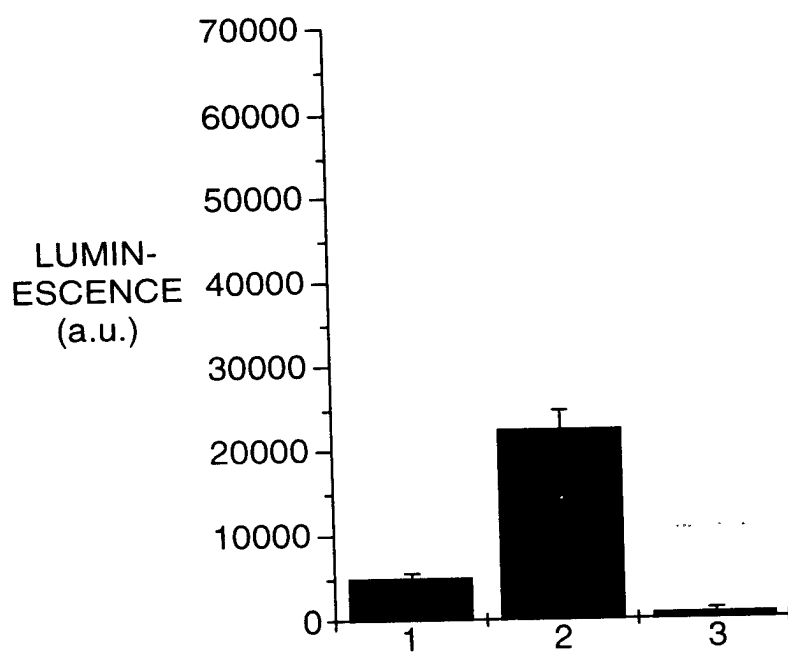


FIG. 4A

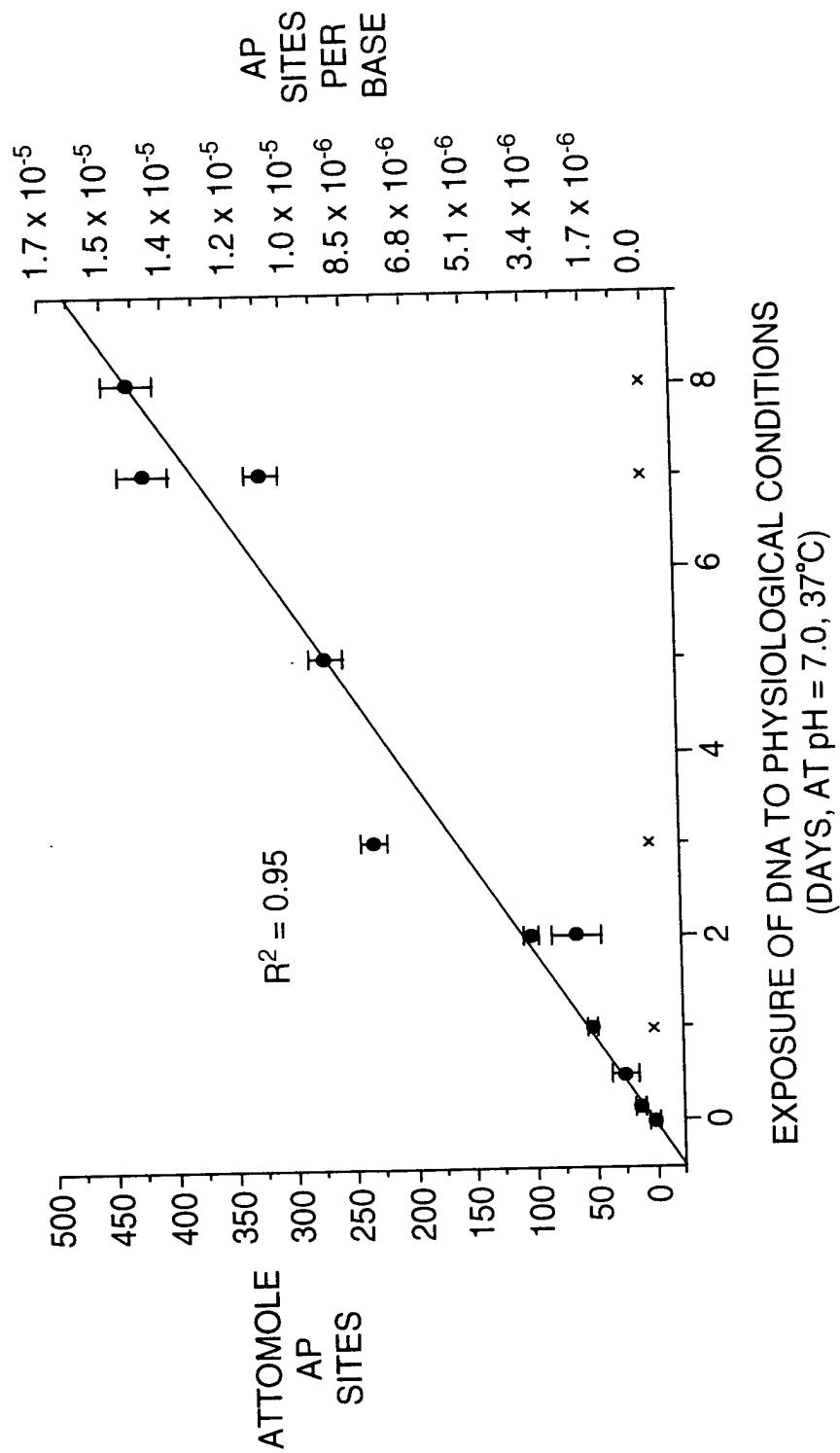


FIG. 4B

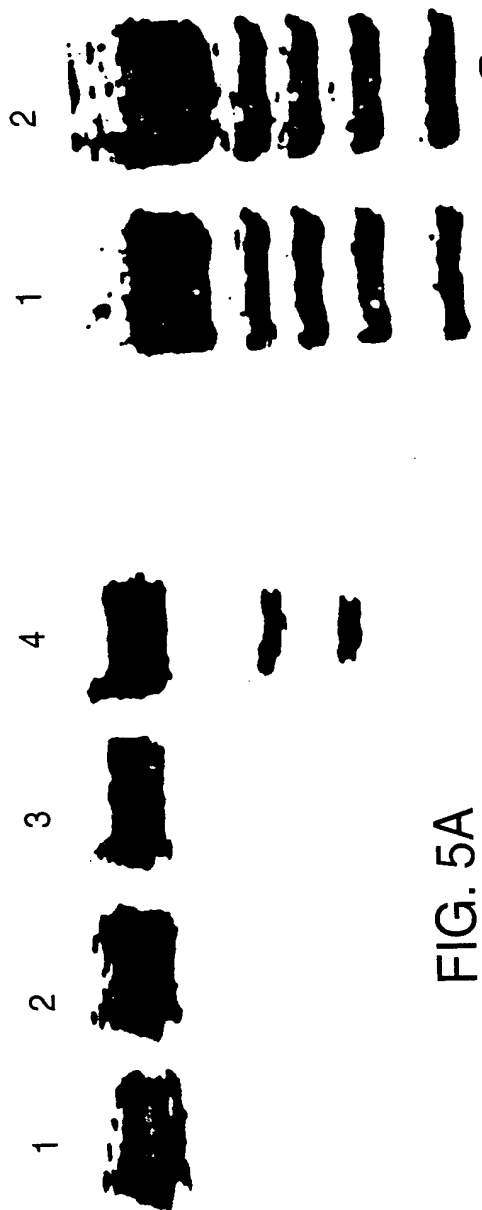


FIG. 5A

FIG. 5B

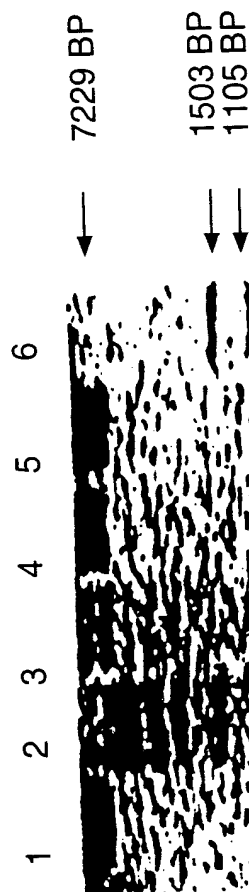


FIG. 5C

0958200-051504

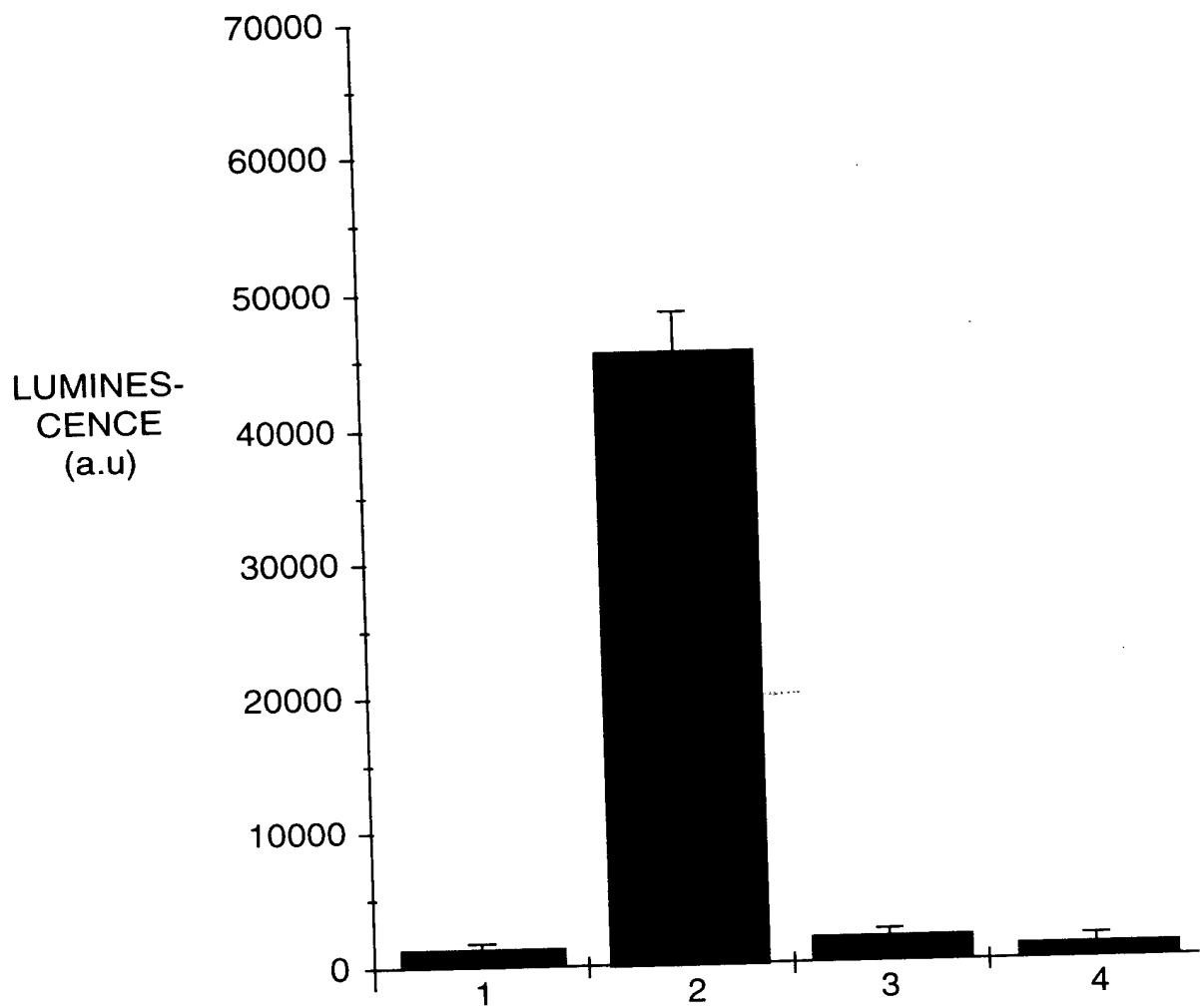


FIG. 6

0955200-054504  
T05T50-00235860

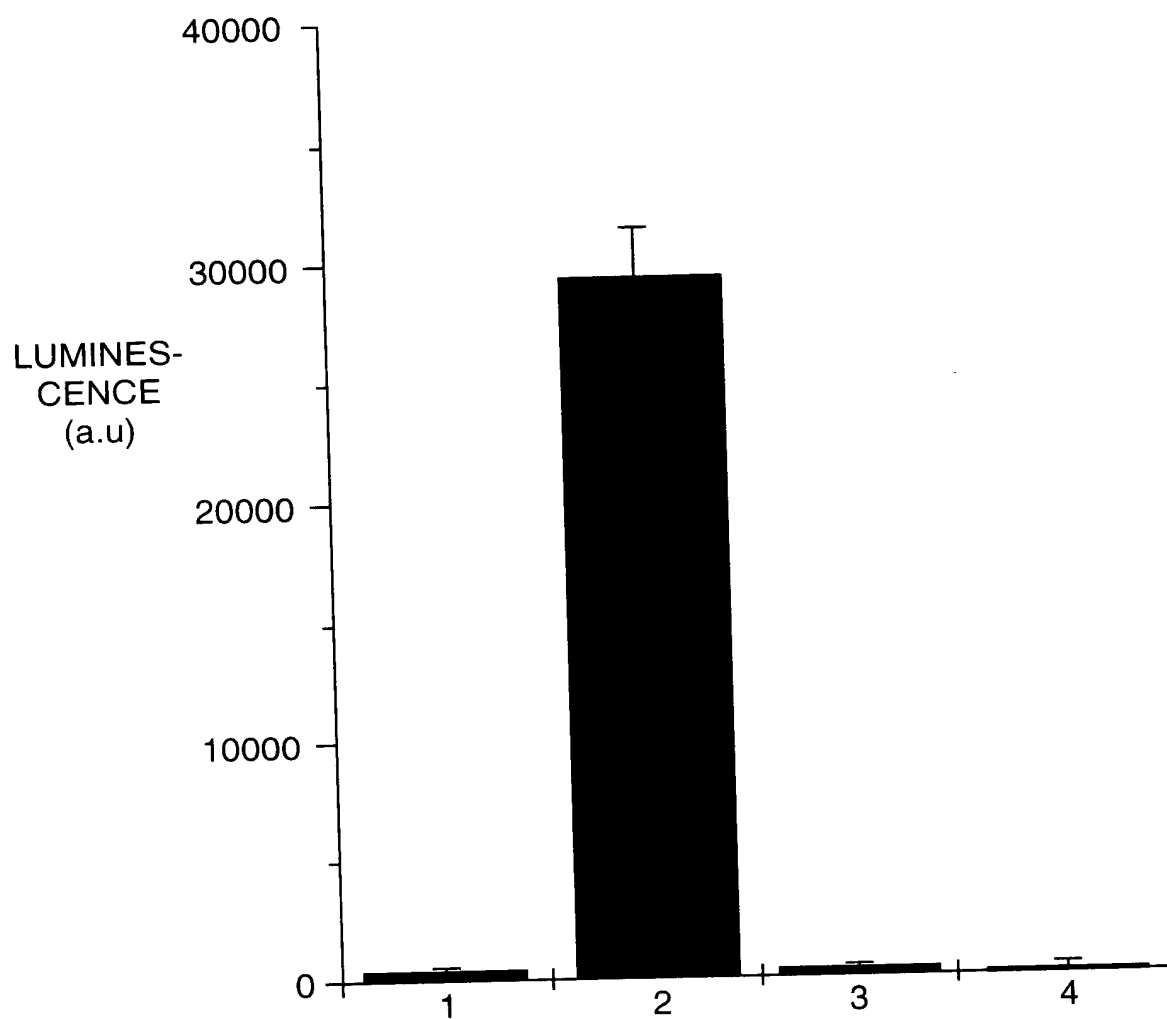
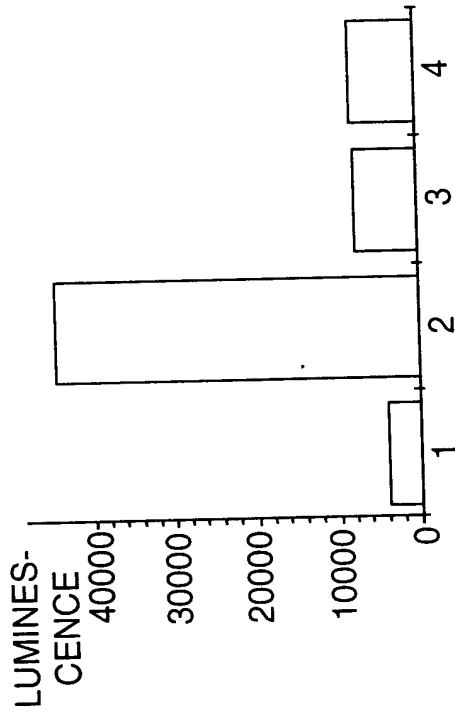


FIG. 7

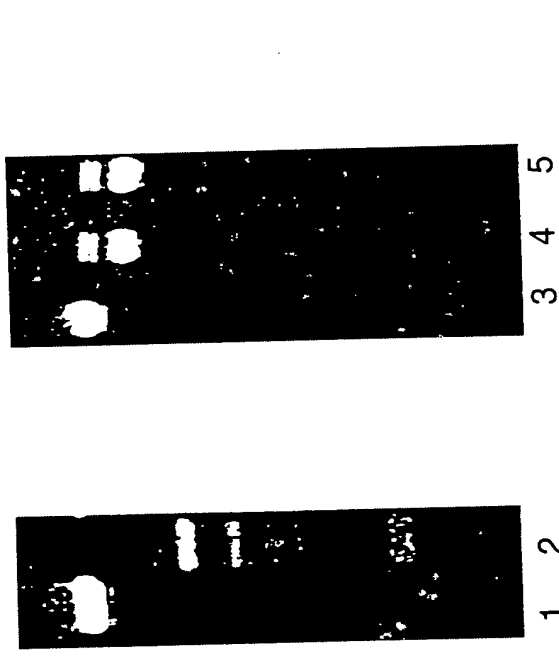


DETECTION OF MISMATCHES FORMED BY  
HYBRIDIZING OLIGONUCLEOTIDES WITH M13 DNA  
AND EXPOSED TO MutY ENZYME



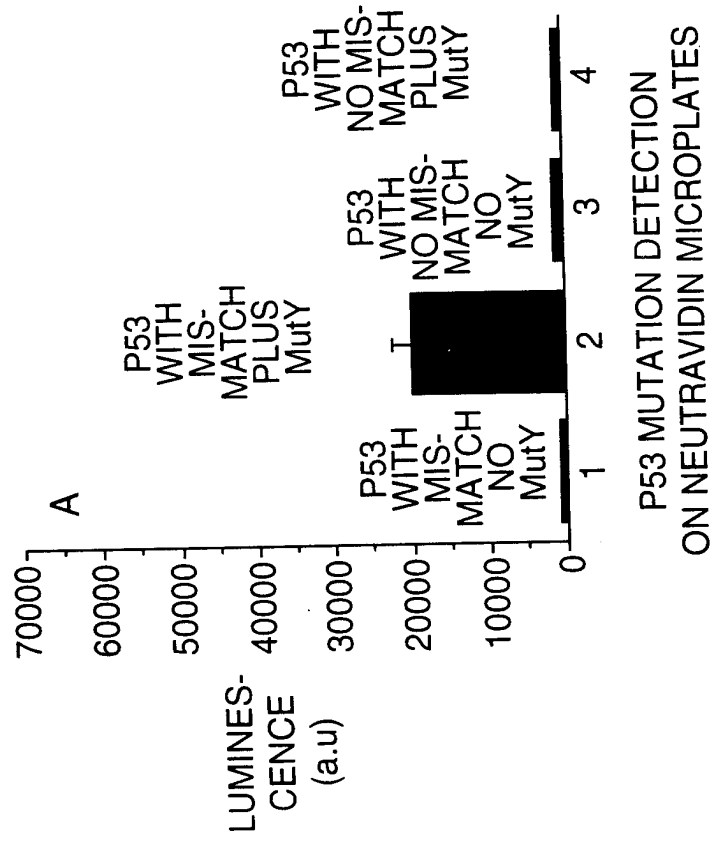
- 1= S.S. M13 DNA WITH ~ 1 A/G MISMATCH PER 2500 BASES, NO ENZYME  
2= S.S. M13 DNA WITH ~ 1 A/G MISMATCH PER 2500 BASES, PLUS ENZYME  
3= D.S. M13 DNA WITHOUT MISMATCH, NO ENZYME  
4= D.S. M13 DNA WITHOUT MISMATCH, PLUS ENZYME

FIG. 8A

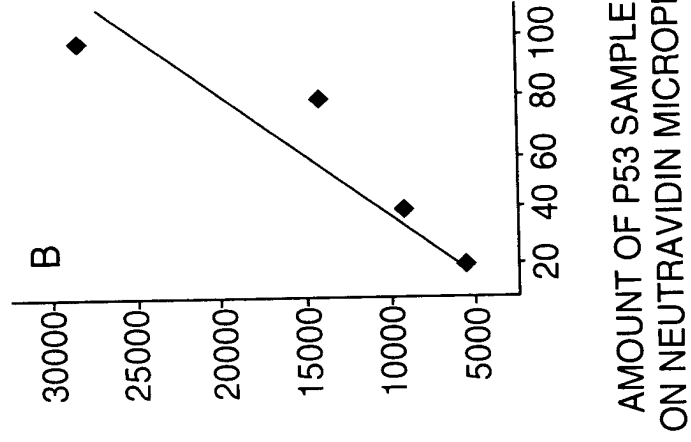


- 1= SINGLE STRANDED (S.S) M13 WITH 1 A/G MISMATCH PER 2500 BASES, NO ENZYME  
2= S.S. M13 WITH 1 A/G MISMATCH PER 2500 BASES, PLUS ENZYME  
3= S.S. M13 WITH 1 A/G MISMATCH PER 2500 BASES, NO ENZYME  
4= DOUBLE STRANDED M13 WITHOUT MISMATCH, NO ENZYME  
5= D.S. M13 WITHOUT MISMATCH, PLUS ENZYME

FIG. 8B



**FIG. 9A**



**FIG. 9B**

M13mp19 DNA TESTED.

A = DNA ALONE

B = DNA PLUS MUTY

C = DNA PLUS 5mM METHOXYAMINE PLUS MUTY

D = DNA PLUS 5mM AED PLUS MUTY

E = DNA PLUS 10mM AED PLUS MUTY

F = DNA PLUS 5mM BARP PLUS MUTY

F E D C B A

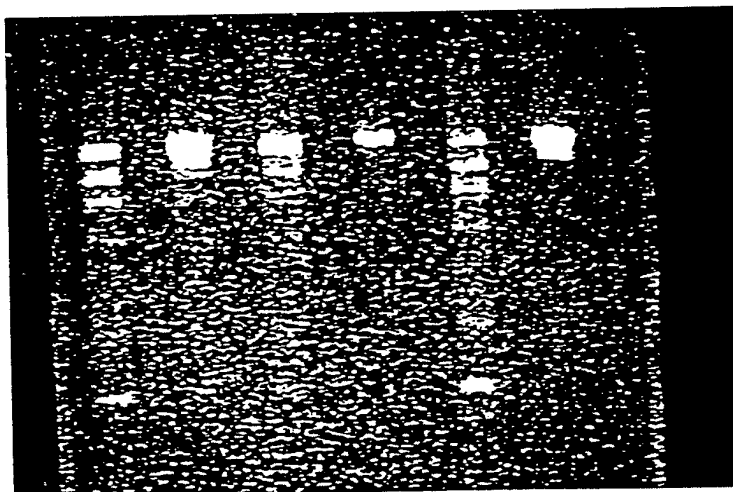


FIG. 10A

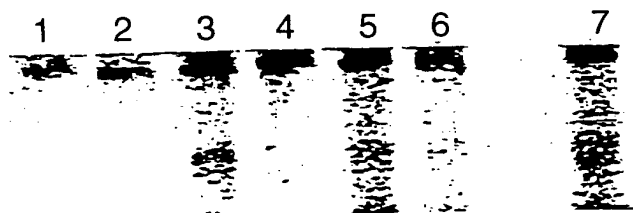
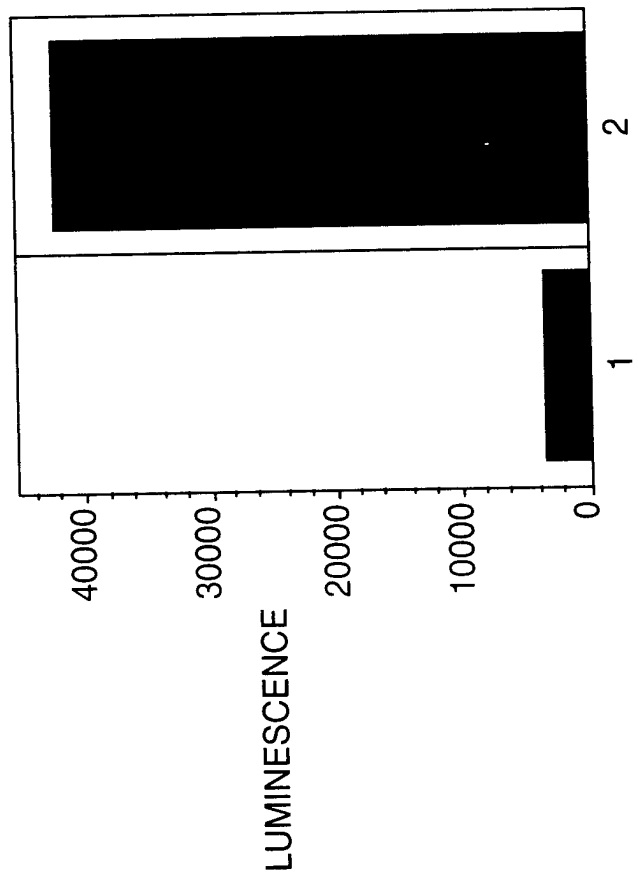


FIG. 10B



1: AED W/O ENZYME MutY  
2: AED WITH MutY

FIG. 11

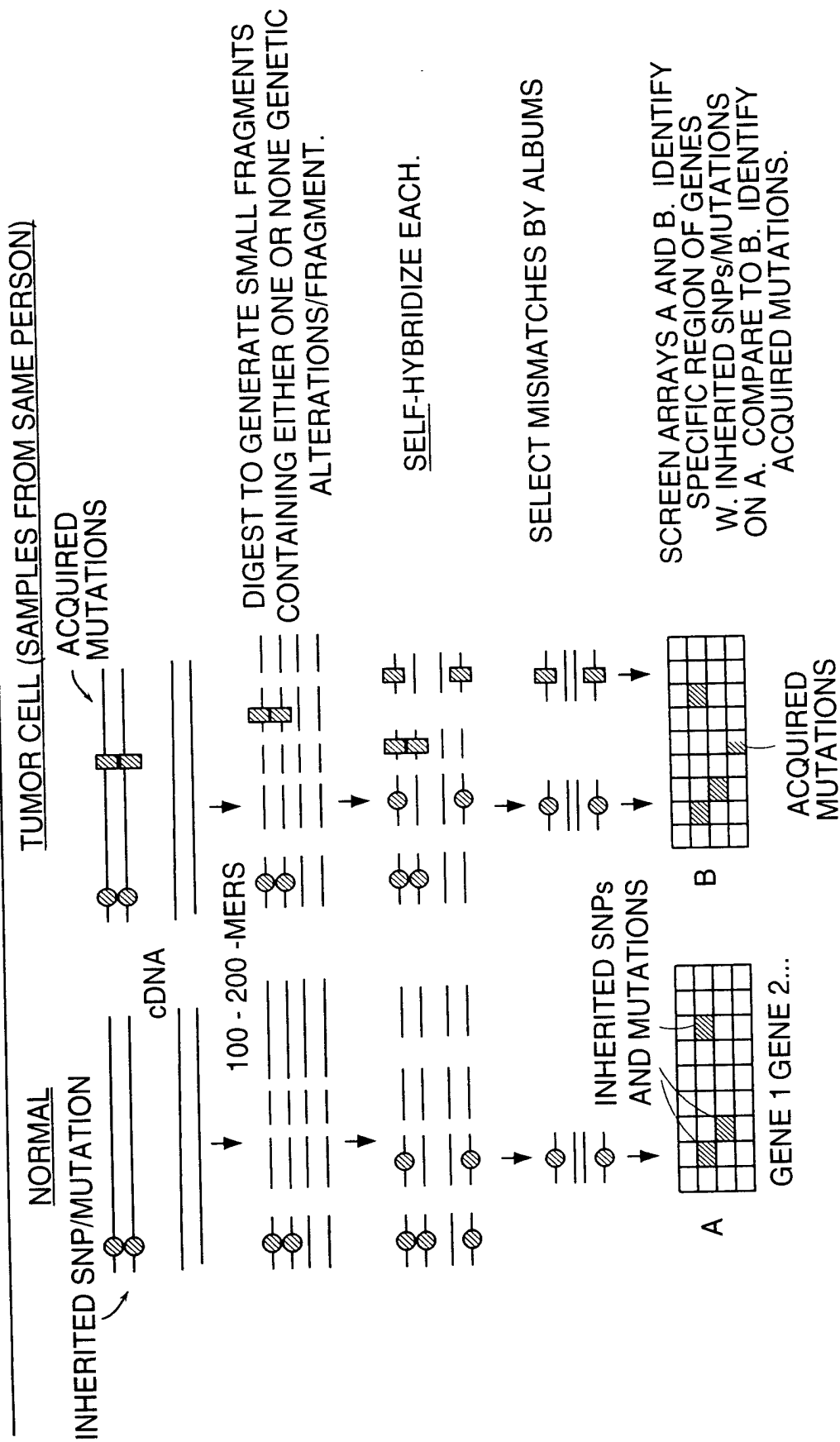
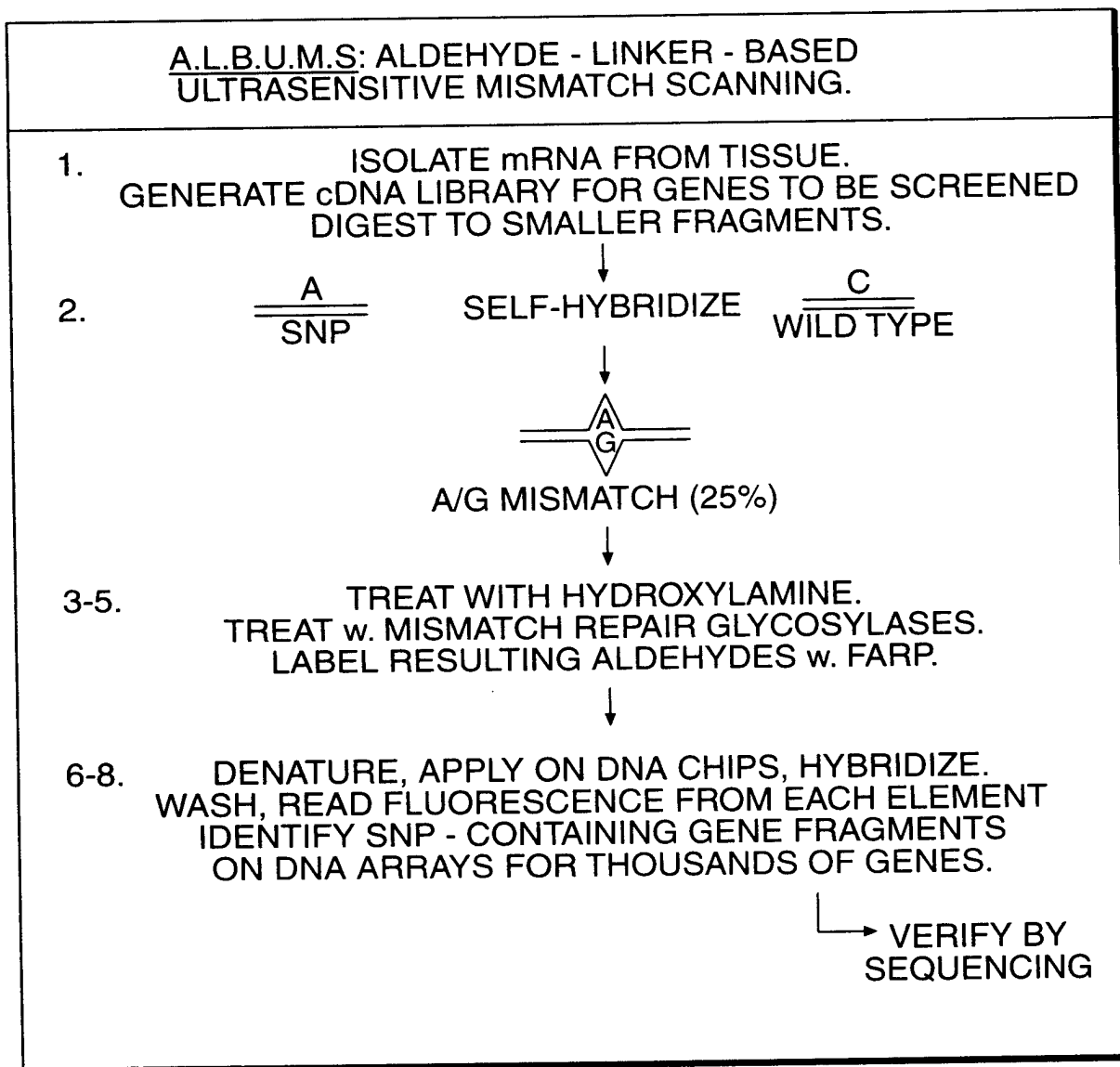


FIGURE 12



**FIG. 13**

SIMPLIFIED PROTOCOL TO DETECT SNPs  
AND MUTATIONS ON DNA CHIPS.

0033550-05150

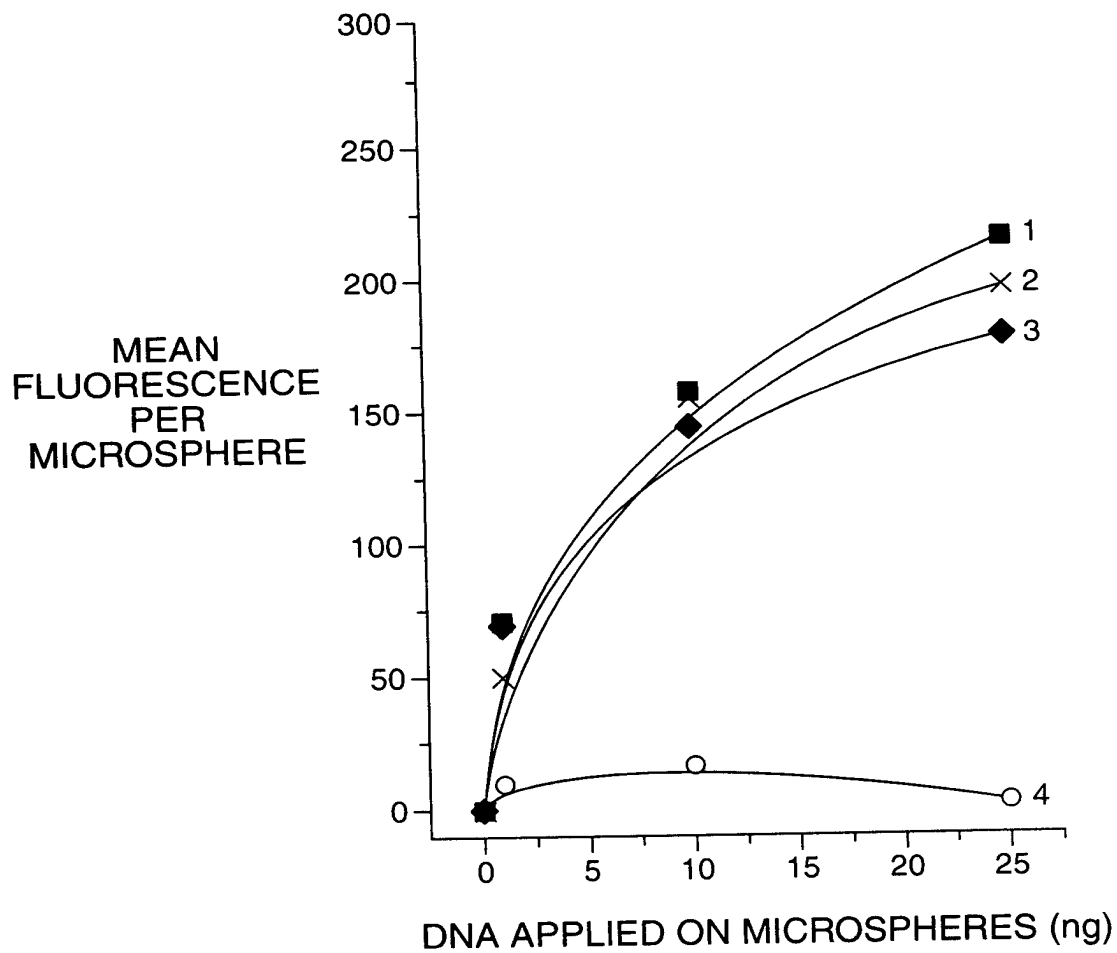


FIG. 14

## MICROSPHERE-BASED MUTATION SCANNING ARRAYS

EACH CODING SEQUENCE IS REPRESENTED BY  
OLIGONUCLEOTIDES (■) SAMPLING THE mRNA  
AT REGULAR INTERVALS.

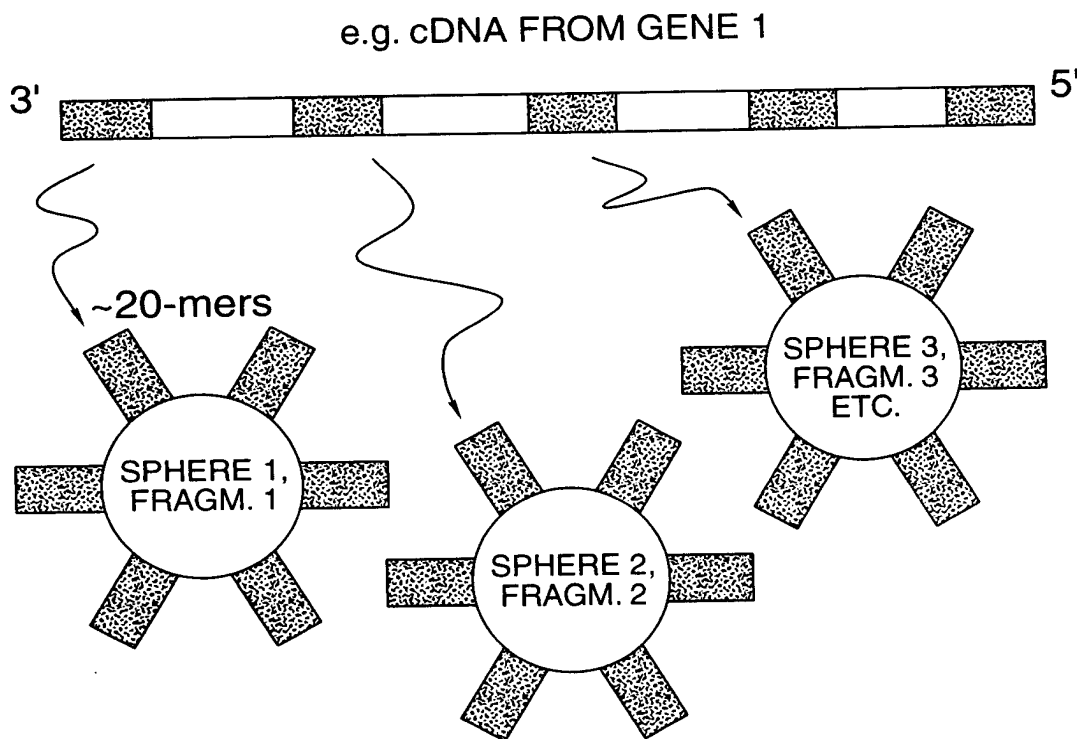


FIG. 15

THE OUTPUT INFO IS IN BINARY FORMAT